

WHAT IS CLAIMED IS:

1. A mercury vapor discharge lamp comprising:
an envelope;
means for providing a discharge;
a discharge-sustaining fill of mercury and an inert gas sealed inside said envelope; and
a phosphor-containing layer coated inside said envelope, said phosphor-containing layer including a blend of phosphors, including:
a blue-green emitting halophosphate;
a red-emitting phosphor; and
a green-emitting phosphor.
2. The lamp according to claim 1, wherein the blend of phosphors further includes a white-emitting halophosphate
3. The lamp according to claim 1, wherein the blue-green emitting halophosphate has the general formula: $\text{Ca}_{5-y}(\text{PO}_4)_3\text{F}_{1-y}\text{O}_y:\text{Sb}_y$, where
 $0.03 < y < 0.07$.
4. The lamp according to claim 2, wherein the white-emitting halophosphate has the general formula: $\text{Ca}_{5-x-y}(\text{PO}_4)_3\text{F}_{1-z-y}\text{Cl}_z\text{O}_y:\text{Mn}_x\text{Sb}_y$, where
 $0.03 < x < 0.22$;
 $0.03 < y < 0.07$; and
 $0.02 < z < 0.2$.
5. The lamp according to claim 1, wherein at least one of the red-emitting phosphor and the green-emitting phosphor includes a rare-earth phosphor
6. The lamp according to claim 5, wherein the green-emitting phosphor is a terbium-activated phosphor selected from the group consisting of lanthanum

phosphate activated with cerium (3+) and terbium (3+) (LAP), cerium magnesium aluminate activated with terbium (CAP), and gadolinium magnesium pentaborate activated with terbium and cerium.

7. The lamp according to claim 5, wherein the red-emitting phosphor includes yttrium oxide activated with europium (3+) (YEO)

8. The lamp according to claim 5, wherein the red-emitting phosphor and the green emitting phosphor are both rare earth phosphors and the ratio of blue-green emitting halophosphate to rare earth phosphors is from 10:9 to 1:1

9. The lamp according to claim 8, wherein the ratio of blue-green emitting halophosphate to rare earth phosphors is from 1:5 to 2:5.

10. The lamp according to claim 9, wherein the ratio of blue-green emitting halophosphate to rare earth phosphors is about 3:10

11. The lamp according to claim 2, wherein the white-emitting halophosphate is 50-90% by weight of the blend of phosphors

12. The lamp according to claim 11, wherein the white-emitting halophosphate is 60-80% by weight of the blend of phosphors

13. The lamp according to claim 12, wherein the white-emitting halophosphate is about 70 wt% by weight of the blend of phosphors

14. The lamp according to claim 2, wherein the phosphor layer is the only phosphor layer coated inside said envelope.

15. The lamp according to claim 2, wherein the phosphor layer has a color rendition index (CRI) of at least 70.

16. The lamp according to claim 1, wherein the phosphor blend is free of blue-emitting rare earth phosphors

17. A method of forming a lamp, the method including:

forming a blend of phosphors, the blend of phosphors including a blue-green emitting halophosphate, a red-emitting phosphor, and a green-emitting phosphor.

forming a coating comprising the blend of phosphors on a wall of an envelope; and

sealing a fill inside the envelope, the fill including mercury and an inert gas

18. The method according to claim 17, wherein the blend of phosphors further includes a white-emitting halophosphate

19 A method of providing a light source, the method including

depositing only a single phosphor layer on a surface of an envelope, the phosphor layer including a blend of phosphors, the blend of phosphors including a white-emitting halophosphate, a blue-green emitting halophosphate, a red-emitting phosphor, and a green-emitting phosphor; and

initiating a discharge within the envelope thereby generating light, at least a portion of the light being converted to light of a different wavelength by the phosphor coating such that light emitted from the envelope has a color rendition index (CRI) of at least 70.